

We Claim:

1. A gateway for mobile communications, comprising:
 - a cache for storing network data recently downloaded from a network;
 - a mobile IP foreign agent;
 - 5 a packet filter that directs requests for the network data from a mobile node to the cache;
 - the packet filter directing the requested network data from the cache to the mobile node by way of the foreign agent, without forwarding the requested network data to a home agent of the mobile node.
- 10 2. The gateway of claim 1, further comprising a storage device that stores a state of the mobile node, the state of the mobile node being updated in the storage device when the mobile node moves from the proximity of the gateway to the proximity of a second gateway having a second foreign agent,
 - 15 wherein the packet filter directs the requested network data from the cache to the mobile node by way of the second foreign agent, without forwarding the requested network data to the first foreign agent or a home agent of the mobile node, while the mobile node is in the proximity of the second gateway.
3. The gateway of claim 2, wherein the state of the mobile node in the storage device is updated in response to a message from the second gateway.
- 20 4. The gateway of claim 1, wherein the packet filter adds at least one packet-mangling rule to a set of firewall policies associated with the mobile node.
5. The gateway of claim 4, wherein the at least one packet-mangling rule is user-specific.
6. The gateway of claim 5, wherein the gateway has at least one port for coupling
25 directly or indirectly to an 802.11 access point.
7. The gateway of claim 1, wherein the packet filter performs multi-level filtering.

8. The gateway of claim 1, wherein the packet filter performs network layer filtering and one of the group consisting of transport layer filtering and application layer filtering.

9. A gateway for mobile communications, comprising:
a cache for storing network data recently downloaded from a network;
5 a foreign agent;
means for directing requests for the network data from a mobile node to the cache;
means for directing the requested network data from the cache to the mobile node by way of the foreign agent, without forwarding the requested network data to a home agent of the mobile node.

10 10. The gateway of claim 9, further comprising a storage device that stores a state of the mobile node, the state of the mobile node being updated in the storage device when the mobile node moves from the proximity of the gateway to the proximity of a second gateway having a second foreign agent,
wherein the data directing means directs the requested network data from the cache to
15 the mobile node by way of the second foreign agent, without forwarding the requested network data to the first foreign agent or a home agent of the mobile node, while the mobile node is in the proximity of the second gateway.

11. The gateway of claim 10, wherein the state of the mobile node in the storage device is updated in response to a message from the second gateway.

20 12. The gateway of claim 9, wherein the request directing means includes a packet filter module that adds at least one packet-mangling rule to a set of firewall policies associated with the mobile node.

13. The gateway of claim 12, wherein the at least one packet-mangling rule is user-specific.

25 14. The gateway of claim 9, wherein the gateway has at least one port for coupling directly or indirectly to an 802.11 access point.

15. A method for mobile worldwide web access, comprising:

5 caching network data recently downloaded from a network in a cache;
directing requests for the network data from a mobile node to the cache;
directing the requested network data from the cache to the mobile node by way of a
foreign agent collocated with the cache, without forwarding the requested network data to a
home agent of the mobile node, while the mobile node is proximate to the cache.

16. The method of claim 15, further comprising:

10 storing a state of the mobile node at a first gateway that includes the cache;
updating the state of the mobile node when the mobile node moves from the
proximity of the first gateway to the proximity of a second gateway having a second foreign
agent;

directing the requested network data from the cache to the mobile node by way of the
second foreign agent, without forwarding the requested network data to the first foreign agent
or a home agent of the mobile node, while the mobile node is in the proximity of the second
gateway.

15 17. The method of claim 16, further comprising updating the state of the mobile node in
response to a message from the second gateway.

18. A computer readable medium encoded with computer program code, wherein, when
the code is executed by a processor, the processor performs a method for mobile
communications, comprising:

20 caching network data recently downloaded from a network in a cache;
directing requests for the network data from a mobile node to the cache;
directing the requested network data from the cache to the mobile node by way of a
foreign agent collocated with the cache, without forwarding the requested network data to a
home agent of the mobile node, while the mobile node is proximate to the cache.

25 19. The computer readable medium of claim 18, wherein the method further comprises:
storing a state of the mobile node at a first gateway that includes the cache;
updating the state of the mobile node when the mobile node moves from the
proximity of the first gateway to the proximity of a second gateway having a second foreign
agent;

directing the requested network data from the cache to the mobile node by way of the second foreign agent, without forwarding the requested network data to the first foreign agent or a home agent of the mobile node, while the mobile node is in the proximity of the second gateway.

- 5 20. The computer readable medium of claim 19, wherein the method further comprises updating the state of the mobile node in response to a message from the second gateway.